REMARKS

Claims 1-3, 7-11, and 15-16 are pending in the application. Claims 1, 3, 9, and 11 are amended and claims 17-20 added with the support of at least FIGS. 1 and 2, paragraph [0053], and original claims 1-3, 7, and 15 of the published application US 2004/0207960. No new matter has been added. The Applicants submit that the cited references as discussed below fail to disclose, alone or combined, all of the features of the amended claims, and respectfully request the rejections be withdrawn.

Double Patenting Rejections

Claims 1-3, 7-11, and 15-16 stand rejected based on judicially-created obviousness-type double patenting over claims 1-40 of U.S. Patent No. 7,220,499 and over claims 1-13 of U.S. Application No. 10/823,473, now U.S. Patent No. 7,327,539. The Applicants file herewith terminal disclaimers for each of these patents under 37 C.F.R. § 1.321(b)-(c) to overcome these rejections.

Rejections under 35 U.S.C. § 102

A. Nakatani (U.S. Patent No. 5,390,061)

Claims 1, 2, 7, 9, 10 and 15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nakatani. Applicants respectfully disagree, at least in view of the amendment herein to claims 1 and 9. Independent claims 1 and 9 have been amended to recite:

> the CPP giant magnetoresistive head being free of an antiferromagnetic layer between the upper and lower shield layers that passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction. . .; and
>
> wherein the pinned magnetic layer includes a laminated ferrimagnetic structure comprising a first pinned magnetic layer and a second pinned magnetic layer which are laminated with a nonmagnetic intermediate layer disposed therebetween.

(emphasis added). The second paragraph in the above amendment comes from claims 3 and 11, respectively. The Office Action required extensive use of Official Notice in addition to Nakatani to reject claims 3 and 11, which will be discussed below with reference to the 35 U.S.C. § 103(a) rejections. The Applicants respectfully submit that

Nakatani now fails to disclose each and every feature of claims 1 and 9, because it fails to disclose "wherein the pinned magnetic layer includes a laminated ferrimagnetic structure comprising a first pinned magnetic layer and a second pinned magnetic layer which are laminated with a nonmagnetic intermediate layer disposed therebetween." For at least this reason, Nakatani fails to anticipate claims 1 and 9. Likewise, Nakatani fails to anticipate claims 2, 7, 10, and 15 by virtue of their dependency from claims 1 and 9, respectively.

With further reference to claims 7 and 15, the Office Action cites to FIG. 1 relative to FIG. 10 of Nakatani. The layers 15, 16 shown in FIG. 10, however, are shield layers 15, 16 as disclosed at column 12, lines 36-41. Shield layers are different from large-area nonmagnetic metal films by the plain language of claims 1 and 7 and 9 and 15. Indeed, nonmagnetic metal films are not disclosed at all by Nakatani. Accordingly, Nakatani fails to disclose all of the features of claims 7 and 15.

B. Carey (U.S. Patent No. 6,757,144)

Claim 1 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Carey. The Applicants respectfully submit that Carey fails to teach all of the features of claim 1. As set forth above, independent claim 1 has been amended to recite that the CPP giant magnetoresistive head is free of an antiferromagnetic layer "between the upper and lower shields that passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction."

In response to arguments, page 15, the Office Action notes that the previous amendment (now deleted) "does not preclude an antiferromagnetic layer from being immediately adjacent to the GMR element." The new amended language should now clarify that if the antiferromagnetic layer is between the upper and lower shield layers, Carey does not disclose this feature where Carey's antiferromagnetic layer also "passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction." The antiferromagnetic layer 332 of FIG. 32 (or 306 in other parts of Carey) clearly is located as described by the amended language. Accordingly, Carey fails to anticipate claim 1.

C. Dill (U.S. Patent No. 5,898,548)

Claim 9 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Dill. The Applicants respectfully submit that Dill fails to teach all of the features of claim 9. As set forth above, independent claim 9 has been amended to recite that the GMR element is free of an antiferromagnetic layer "between the upper and lower shields that passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction."

In response to arguments, page 15, the Office Action notes that the previous amendment (now deleted) "does not preclude an antiferromagnetic layer from being immediately adjacent to the GMR element." The new amended language should now clarify that if the antiferromagnetic layer is between the upper and lower shield layers, Dill does not disclose this feature where Dill's antiferromagnetic layer also "passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction." The antiferromagnetic layer 116 as shown in FIG. 4B clearly is located as described by the amended language. Accordingly, Dill fails to anticipate claim 9.

D. Saito (U.S. Patent Publication No. 2003/1013299)

Claims 9 and 11 stand rejected under 35 U.S.C. § 102(a) and/or 35 U.S.C. § 102(e) as being anticipated by Saito. The Applicants respectfully submit that Saito fails to teach all of the features of claims 9 and 11. As set forth above, independent claim 9 has been amended to recite that the GMR element is free of an antiferromagnetic layer "between the upper and lower shield layers that passes generally perpendicularly through a vertical plane drawn through the group of adjacent parallel layers in a thickness direction."

Like Carey and Dill, Saito utilizes antiferromagnetic layers (23, 24) in the magnetoresistive head structure located as described by the amended language. This is discussed throughout the reference (e.g., paragraphs [0020], [0023], [0030], [0031], [0103], [0129], etc.). For the same reasons as set forth above, the Applicants respectfully submit that Saito fails to anticipate claims 9 and 11, the latter depending from the former.

4. Rejections under 35 U.S.C. § 103(a)

Claims 3, 8, 11, and 16 stand rejected as being unpatentable over Nakatani 5,390,061 in view of Official Notice. As noted above, claims 1 and 9 each were amended to include part of the language from claims 3 and 11, respectively. The Applicants respectfully submit that none of the cited references disclose or suggest, either alone or combined, all of the features of claims 1, 3, 8-9, 11, and 16.

As a preliminary note, Nakatani fails to anticipate claims 1 and 9 from which depend claims 3, 8, 11, and 16, respectively. Accordingly, Nakatani fails to fill the gaps in disclosure as argued above, and claims 3, 8, 11, and 16 are patentable as dependent from allowable base claims.

Furthermore, in rejecting the above claims under § 103(a), the Office Action uses Official Notice in a "shot-gun" approach. The features recited in claims 3, 8, 11, and 16 (and now, in part, claims 1 and 9) are all purportedly taught by Official Notice if not taught by Nakatani. The Office Action states at various locations throughout pages 11 through 14 that all of these features are "notoriously old and well known" in the art. The Applicants respectfully submit that if they are truly "notoriously old and well know," that the body of prior art discussing them should be replete with teachings, and respectfully request that the Examiner provide factual support for the Official Notice.

The Applicants respectfully disagree that all of these features are notoriously well known in the art and request, pursuant to 37 C.F.R. 1.104(d)(2), that the Examiner provide an affidavit detailing the facts on which the above rejections are based. This section reads:

> When a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data shall be as specific as possible, and the reference must be supported, when called for by the applicant, by the affidavit of such employee, and such affidavit shall be subject to contradiction or explanation by the affidavits of the applicant and other persons.

The Applicants respectfully reserve the right to contradict or explain a contrary view to that expressed in any affidavit of the Examiner.

5. New Claims 17-20 are Patentable

Claim 17 has been added to positively recite the structure of one of the embodiments of the application. Note the use of the "consisting of" language means that the giant magnetoresistive element and the pinned magnetic layer include no more than the layers therein recited. The Applicants respectfully submit that the prior art references, alone or combined, fail to disclose all of the features of claim 17, including:

> large-area nonmagnetic metal films abutting against the GMR element and the lower shield layer and between the GMR element and the upper shield layer, respectively, so that the large-area nonmagnetic metal films are in direct contact with the pinned magnetic layer and the free magnetic layer and have larger areas than those of the pinned magnetic layer and the free magnetic layer, respectively.

The "abutting against" language means that no antiferromagnetic layer can be located between these large-area nonmagnetic metal films and the outer layers of the GMR element, e.g., the pinned magnetic layer or the free magnetic layer. Likewise, no antiferromagnetic layer can be located between these large-area nonmagnetic metal films and the upper or lower shield layers. Within this closed universe of layers and abutting layers, no antiferromagnetic layer is recited. Accordingly, claim 17 is patentable over Carey, Dill, and Saito for at least the same reasons as discussed above, e.g., because with inclusion of an antiferromagnetic layer, the positive recitations of claim 17 fail to be disclosed or suggested.

Furthermore, as discussed above, Nakatani does not disclose large-area nonmagnetic metal films, and further generally fails to teach the features of claim 17, as arranged. Finally, one using Nakatani would not be motivated to combine Saito at least because Nakatani does not disclose or have need of large-area nonmagnetic metal films. For at least these reasons, claim 17 is also patentable over Nakatani. Likewise, claims 18-20 are patentable by virtue of their dependency from claim 17.

6. Conclusion

Based on the above remarks, Applicants respectfully submit that the claims are in condition for allowance. The examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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